ABSTRACT

To provide a method of controlling a conductivity of a Ga_2O_3 system single crystal with which a conductive property of a β-Ga_2O_3 system single crystal can be efficiently controlled.

The light emitting element includes an n-type β-Ga_2O_3 substrate, and an an n-type β-$AlGaO_3$ cladding layer, an active layer, a p-type β-$AlGaO_3$ cladding layer and a p-type β-Ga_2O_3 contact layer which are formed in order on the n-type β-Ga_2O_3 substrate. A resistivity is controlled to fall within the range of 2.0×10^{-3} to 8×10^{2} Ωcm and a carrier concentration is controlled to fall within the range of 5.5×10^{15} to $2.0 \times 10^{19}/cm^3$ by changing a Si concentration within the range of 1×10^{-5} to 1 mol%.